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| 10/808,655 | 03/24/2004 | Raymond Wu | 384938077US | 6107 |

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| EXAMINER |
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WANG, KENT F

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| ART UNIT | PAPER NUMBER |
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2609

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05/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/808,655

Applicant(s)

WU, RAYMOND

Examiner

Kent Wang

Art Unit

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/13/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The reference listed on the disclosure statement (IDS) submitted on 07/13/2005 has being considered by the examiner (see attached PTO 1449).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 7-9, 10-11, 13, and 15-18 are rejected under 35 U.S.C. § 102(b) as being anticipated by Misawa, US 6,774,946.

Regarding claim 13, Misawa discloses a method for operating a mobile device (i.e. an electronic camera), the method comprising: capturing an image with an image sensor (i.e. CCD 14) in the mobile device; and charging a battery (i.e. a rechargeable battery 24) in the mobile device with the image sensor (see col. 1, lines 7-11, and col. 4, lines 40-42).

Regarding claim 1, Misawa discloses a mobile device, comprising: a battery (24); a battery charger (i.e. power-supply control circuit 23) electrically coupled to the battery;

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and an image sensor (14) operable coupled to the battery charger to selectively charge the battery (see col. 4, lines 40-42).

Regarding claim 10, Misawa discloses mobile device, comprising: a rechargeable battery (24); a battery charger (23) electrically coupled to the battery; and an image sensor (14) for capturing images, the image sensor having a plurality of pixels (e.g. see figure 3 for a diagram of a plurality of pixel array) and a timing/control circuit (i.e. horizontal shift register 79 and vertical shift register 65) operable coupled to the pixels, wherein the timing/control circuit controls the pixels to selectively provide constant current from the pixels to the battery charger to charge the battery (see col. 4, lines 40-44 and col. 5, lines 18-65).

Regarding claim 2, Misawa discloses an image sensor comprises an array of pixels and a timing/control circuit (i.e. CCD 14) for controlling the pixels to selectively provide constant current from the pixels to the battery charger (e.g. charging current obtained from the CCD and consumed current are compared; see col. 4, lines 40-44 and col. 6, lines 38-40).

Regarding claim 3, Misawa discloses an the image sensor (14) comprises a timing/control circuit (79 and 65) and an array of pixels arranged in columns (e.g. figure 3), wherein the timing/control circuit selectively controls the pixels so that multiple pixels in an individual column provide current to the battery charger simultaneously (e.g. gate terminals of the vertical selection transistor 63 are connected to horizontal address lines S11 to S13 each having one end connected to a vertical shift register 65, for example,

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all pixels in one line are simultaneously selected and supplied to a column reading circuit in the form of currents; see col. 4, lines 51-65).

Regarding claim 5, Misawa discloses an image sensor (14) is configured to capture images (e.g. camera equipped with a solid-state electronic image sensing device; col. 1, lines 7-11); and the battery powers the image sensor when the image sensor captures images (e.g. operation performed when signal charge that has accumulated in the photodiodes 62; see col. 5, lines 18-20).

Regarding claim 7, Misawa discloses a mobile device further comprising a housing (see figure 1), wherein the battery, battery charger, and image sensor are contained within the housing (e.g. figure 2 is a block diagram showing the electrical construction of the electronic camera).

Regarding claim 8, Misawa discloses a mobile device further comprising a camera unit (i.e. electronic camera; col. 1 lines, 7-11) including the image sensor (i.e. CCD 14).

Regarding claim 9, Misawa discloses an image sensor comprises a color complementary metal oxide semiconductor (CMOS) image sensor (i.e. amplifying-type MOS sensors; col. 4, lines 48-49).

Regarding claims 11, 15, 16, 17, and 18, these claims are recited same limitations as claims 3, 2, 3, 5, and 10, respectively. Note both claims 11 and 16 are recited same limitations as claim 3. Thus they are analyzed as previously discussed with rejected to claims 3, 2, 3, 5, and 10 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 6, 12, and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Misawa in view of Tian, US 6,803,553.

Regarding claim 4, Misawa discloses an image sensor is configured to capture images.

Misawa does not does not explicitly disclose the image sensor is configured to provide current for charging the battery before and/or after capturing images.

Tian discloses an image sensor is configured to provide current for charging the battery before and/or after capturing images (e.g. image sensor's standby mode; see col. 3, line 48 to col. 4, line 7).

Misawa and Tian are analogous art because they are from the same field of endeavor of an image sensor for charging a battery. At the time of the invention, it would have been obvious to a person of the ordinary skill in the art to use Tian's standby mode in Misawa's digital camera. The suggestion/motivation would have been to have two phases operation so that to implement a second phase of the reset step during which the rest of the charge accumulated in photoelement 314 is drained to battery (col. 3, lines 36-47), thereby when the current falls below a specified threshold

value for the current mode, control circuit 314 generates the appropriate control signals to transition to the second phase of the mode (col. 4, lines 17-23).

Regarding claim 6, Misawa discloses an image sensor comprises an array of pixels and the mobile device further comprises a signal processor (i.e. digital signal process 17).

Misawa does not does not explicitly disclose the mobile device further comprises a switch to direct current from the pixels to the signal processor when the image sensor captures images, and direct current from the pixels to the battery charger when the battery charger charges the battery.

Tian discloses a switch (i.e. control circuit 334) to direct current from the pixels to the signal processor when the image sensor captures images (e.g. normal operation mode), and direct current from the pixels to the battery charger when the battery charger charges the battery (e.g. standby mode) (see col. 3, lines 11-35).

Regarding claims 12 and 14, these claims are recited same limitations as claims 6 and 4, respectively. Thus they are analyzed as previously discussed with rejected to claims 6 and 4 above.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Ohnogi (US 6,661,462) discloses a digital camera includes an interface via which the digital signals of a photographed image are transferred to an

external data processing device, an internal power supply for the digital camera, and a power supply circuit that receives power from the data processing device.

- Barna et al. (US 7,068,319) disclose a system of reducing power consumption in an active pixel sensor.
- Roustaei (US 2003/0011695) disclose a method and apparatus of controlling power consumption in a CMOS active pixel sensor (APS) transducer array, which has a number of APS's arranged in columns and rows and connected to a power supply, for providing output signals representing an image and wherein the outputs of selected APS's are decimated to reduce the output bandwidth of the transducer.
- Goris et al. (US 2004/0257463) disclose an electronic camera capable of performing an initial compression and advanced processing of images has a user interface with an indicator that warns a user when the camera is about to write to removable nonvolatile memory.

Inquiries

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Wang whose telephone number is 571-270-1703. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on 571-272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kent Wang

19 April 2007


CHANH D. NGUYEN
SUPERVISORY PATENT EXAMINER